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Intellectual Property Administration
P. O. Box 272400
Fort Collins, CO 80527-2400

EXAMINER

AL HASHEMI, SANA A

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Technology Center 2100

**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 10/039,617
Filing Date: January 04, 2002
Appellant(s): MISHRA ET AL.

Phil Lyren
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed June 29, 2005.

(1) *Real Party in Interest*

A statement identifying the real party in interest is contained in the brief.

(2) *Related Appeals and Interferences*

A statement identifying the related appeals and interferences which will directly affect or be directly affected by or have a bearing on the decision in the pending appeal is contained in the brief.

(3) *Status of Claims*

The statement of the status of the claims contained in the brief is correct.

(4) *Status of Amendments After Final*

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) *Summary of Invention*

The summary of invention contained in the brief is correct.

(6) *Issues*

The appellant's statement of the issues in the brief is correct.

(7) *Grouping of Claims*

Appellant's brief includes a statement that claims 1-10 do not stand or fall together and provides reasons as set forth in 37 CFR 1.192(c)(7) and (c)(8).

(8) *Claims Appealed*

The copy of the appealed claims contained in the Appendix to the brief is correct.

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(9) Prior Art of Record

No prior art is relied upon by the examiner in the rejection of the claims under appeal.

(10) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claims 1-10 are rejected under 35 U.S.C. 101. This rejection is set forth in a prior Office Action, mailed on March 1, 2005.

DETAILED ACTION

1. Claim Status: 1-10 are rejected.

Claim Rejections - 35 USC § 101

2. The claimed invention is directed to non-statutory subject matter.
3. Claim 1-10 are rejected under 35 U.S.C. 101 because none of the independent claims in conjunction with all dependent claims are statutory.
4. The claimed subject matter is directed to a “mathematical algorithm”. As such, the claimed subject matter is not statutory and not eligible for patent protection.

No mathematical equation can be used, as a practical matter, without establishing and substituting values for the variable expressed therein. Substitution of values dictated by the formula has thus been viewed as a form of mathematical step. If the steps of gathering and substituting values were alone sufficient, every mathematical equation, formula, or algorithm having any practical use would be per se subject to patenting as a “process” under 101.

Consideration of whether the substitution of specific values is enough to convert the

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disembodied ideas present in the formula into an embodiment of those ideas, or into an application of the formula, is foreclosed by the current state of law.

For subject matter to be statutory, the claimed process must be limited to a practical application of the abstract idea or mathematical algorithm in the technology arts. See *Alappat*, 33 F. 3d at 1543, 31 USPQ 2d at 1556-57 (quoting *Diamond v. Diehr*, 450 U.S. at 192, 209 USPQ at 10). See also *Alappat* 33 F. 3d at 1569, 31 USPQ2d at 1578-79 (Newman, J., concurring)(“unpatentability of the principle does not defeat patentability of its practical application”) (citing *O’ Reilly v. Mores*, 56 U.S. (15 how.) at 114-19). A claim is limited to a practical application when the method, as claimed, produces concrete, tangible and useful results; i.e., the method recites a step or act of producing something that is concrete, tangible and useful. See *AT&T*, 172 F.3d at 1358, 50USPQ2d at 1452.

For a claimed invention to be statutory, the claimed invention must be within the technological art. Mere ideas in the abstract (i.e., abstract idea, law of nature, natural phenomena) that do not apply, involve, use, or advance the technological art fail to promote the “progress of science and the useful arts” (i.e., the physical sciences as opposed to social sciences, for example) and therefore are found to be non-statutory subject matter. For a method claim to pass muster, the recited process must somehow apply, involve, use, or advance the technological arts.

As to technological arts recited in the preamble, mere recitation in the preamble (i.e., intended or field of use) or mere implication of employing a machine or article of manufacture to perform some of the recited steps does not confer statutory subject matter to an otherwise abstract idea unless there is positive recitation in the claim as a whole to breathe life and

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meaning into the preamble. In *Bowman* (Ex parte *Bowman*, 61 USPQ2d 1665, 1671 (BD. Pat. App. & Inter. 2001) (Unpublished), the board affirmed the rejection under U.S.C. 101 as being directed to non-statutory subject matter. Although *Bowman* discloses transforming physical media into a chart and physically plotting a point on said chart, the Board held that the claimed invention is nothing more than an abstract idea, which is not tied to any technological art or environment.

5. In the present case, claims 1, 6, and 9, recite a mathematical algorithm, which can be implemented by the mind of a person or by the use of a pencil and paper. Since the claims recites steps calculating the diameter value and determining the center-based clustering, which is a mathematical algorithm. In another words, since the claimed invention, as a whole, is not within the technological arts as explained above, these claims only constitute an idea and does not apply, involve, use, or advance the technological arts, thus, it is deems to be directed to non-statutory subject matter.

Response to Amendment

Applicant's arguments filed 12/10/2004 have been fully considered but they are not persuasive.

Applicant argues that the 101 rejection is improper and the claims are statutory, and arguing that claims 1 “provides real world value (i.e. the output centers) this real world value is more that a mere idea or concept”.

Examiner disagrees. For the claims to be statutory they need to be useful, concrete and tangible. In the instance application the “computer implemented method” will not make the

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claims statutory unless the claims meet the required usefulness, concrete, and tangibility.

Regarding Claims 1, 6, and 9, the body of the claims is not tangible since it does not give the useful and tangible results, since the preamble of the claims discloses a “method for center-based clustering” no where in the body of the claims the clustering based on the center is claimed, it’s not clear if the “set S” is the same as the “data set” or some thing different, the user of the term “through” did not tie the “set S of n points to identify k centers” to the “sampling of large data sets”, the out putting of the centers does not show and usefulness or tangible and it does not show any relation between the centers and the clustering disclosed in the preamble the only clustering claimed is the sample R clustering which does not show the usefulness or tangibility which make the claim non-statutory. The “real world value” does not make the claim tangible or useful.

Applicant argues, “ if the examiner ... reads the back ground of the invention.”

Examiner disagrees. The back ground of the invention is to help understanding the claimed invention, not justifies the status of the claims, since the office examine the claims in light of the specification but does not read the specification into the claims.

Applicant argues “most prior art clustering methods are not designed to work with massively large datasets, especially because most computer implemented clustering methods require multiple passes through the entire datasets which may overwhelm or bog down a computer system if the dataset is too large. As such, it may not be feasible to cluster large datasets, even given the recent developments in large computing power.”

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Examiner disagrees. The applicant arguing the preamble of the claims, which has been considered and was not given a much of a patentable weight since the body of the claims did not disclose it.

Applicant argues "The application of clustering to knowledge discovery and data mining require a clustering technique with quality and performance guarantees that apply to large datasets. . . . As described fully below, the fast sampling technique of the present invention is sub linear, and as such, significantly improves the efficiency of computer resources, reduces time of execution, and ultimately provides for an accurate, fast technique for clustering which is independent of the size of the data set."

Examiner disagrees. Since the claims did not disclose any step of clustering or data mining. Examiner didn't give neither the clustering nor the data mining in the instance application any patentable weight.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

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however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

(11) *Response to Argument*

Applicant argues "that independent claims 1, 6, and 9 recite a computer implemented method." As clearly supported in the law, computer implemented methods are "processes" according to 35 USC j 101 (see MPEP 2106, IV, A: "The term process' means process, art, or method . . ."). Thus, Applicants argue claims 1 - 10 as being within the category of "processes" according to 35 USC 101."

Examiner disagrees. Even if the claims recite a computer implemented method does not make the claims statutory. When there is no tangible / concrete results the claims are non statutory. For example if the claimed subject matter is directed to steps of determining value of diameter of a space M that comprises set S of N points, obtaining a sample R from set S of N points and determining the cluster sample R and outputting the centers based on the sample R , all we have with this claimed invention involves manipulating an abstraction. Thus, such claim(s) is not statutory. See, e.g., Gottschalk v. Benson 409 U.S. 63 (1972) (finding machine-implemented method of converting binary-coded decimal number into pure binary numbers unpatentable).

The federal Circuit held that the mere manipulation of abstract ideas are not patentable In re Schrader, 22 F. 3d 290, 292-93, 30 USPQ2d 1455, 1457-58 (Fed. Cir. 1994). If a claimed process manipulates only numbers, abstract concepts or ideas, or signal representing any of the

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foregoing, the claim is not being applied to appropriate matter. Schrader, 22 F.3d at 294-95, 30 USPQ2d at 1458-59. The Federal Circuit also recognizes that the fact that nonstatutory method is carried out on a programmed computer does not make the process claim statutory. In re Grams, 888 F. 3d835, 841, 12 USPQ2d 1824, 1829 (claim XXX ruled nonstatutory even though it was a computer-implemented process).

Applicant argues, "The Examiner contends that the independent claims have no practical application and, thus, do not produce a useful, concrete, tangible result. Instead, the Examiner argues that the claims are to a mathematical algorithm and, therefore, are not statutory under 35 USC § 101 (see FOA at p. 2). For several reasons, Applicants respectfully disagree. Applicants' claims have a practical application in the technological arts since the claims produce a concrete, tangible, and useful result. In other words, the claims recite at least one step or one act that produces something that is concrete, tangible, and useful."

Examiner disagrees. The claimed invention as a whole must accomplish a practical application. That is, it must produce a "useful, concrete and tangible result." State Street, 149 F.3d at 1373, 47 USPQ2d at 1601-02. The purpose of this requirement is to limit patent protection to inventions that possess a certain level of "real world" value, as opposed to subject matter that represents nothing more than an idea or concept, or is simply a starting point for future investigation or research (Brenner v. Manson, 383 U.S. 519, 528-36, 148 USPQ 689, 693-96); In re Ziegler, 992, F.2d 1197, 1200-03, 26 USPQ2d 1600, 1603-06 (Fed. Cir. 1993)). Accordingly, a complete disclosure should contain some indication of the practical application for the claimed invention, i.e., why the applicant believes the claimed invention is useful. Apart from the utility requirement of 35 U.S.C. 101, usefulness under the patent eligibility standard

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requires significant functionality to be present to satisfy the useful result aspect of the practical application requirement. See *Arrhythmia*, 958 F.2d at 1057, 22 USPQ2d at 1036. Merely claiming nonfunctional descriptive material stored in a computer-readable medium does not make the invention eligible for patenting. For example, a claim directed to a word processing file stored on a disk may satisfy the utility requirement of 35 U.S.C. 101 since the information stored may have some "real world" value. However, the mere fact that the claim may satisfy the utility requirement of 35 U.S.C. 101 does not mean that a useful result is achieved under the practical application requirement. The claimed invention as a whole must produce a "useful, concrete and tangible" result to have a practical application.

Although the courts have yet to define the terms useful, concrete, and tangible in the context of the practical application requirement for purposes of these guidelines, the following examples illustrate claimed inventions that have a practical application because they produce useful, concrete, and tangible result. Examiner believes that none of the claims 1, 6, and 9 meet the useful, tangible and concrete as disclosed in the MPEP.

Applicant argues, "Applicants' specification discusses numerous other examples of practical applications for the claimed invention. As another example, the specification clearly discusses a practical application to data mining and computer implemented clustering techniques".

Examiner disagrees. The office examines and allow/rejects the claim language in light of the specification and the specification is not the subject that the office examines for patentability.

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An appeal conference was held on July 21, 2005 with the conferees:

Sana Al-Hashemi (Assistant Examiner), Jeffrey Gaffin (SPE), Charles Rones (SPE), and Hosain Alam (SPE).

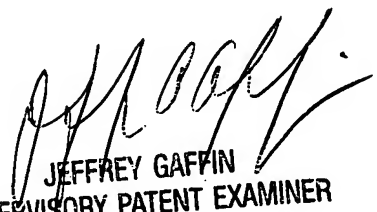
Respectfully submitted,

SA

July 25, 2005


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